

EnsPost Configuration Guide

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Change History

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1 Overview

In addition to installing software, adding EnsPost components to CHPS requires adding and updating FEWS configuration files, and using the FEWS GUI to verify the installation is successful. This guide provides instructions for configuring CHPS to execute EnsPost to post process stream flow ensembles.

For cases where a configuration change contains text that is specific to an RFC (new or existing file) a description of the text and/or a sample file is provided.

1.1 Notation

Within this document, the following notation is used:

- All graphical interface components are **Capitalized and in Bold**.
- All XML snippets are in this font.
- All command line entries are in this font.
- All important terms defined in the Section 1.2, Terminology, are *italicized*.

1.2 Terminology

- *installation stand-alone*: The stand-alone in which the EnsPost components will be installed, setup in Section 1.4.
- *installation locations*: The locationIds of all of the locations for which EnsPost must post-process ensembles for that segment.

1.3 Directories of Note

The following directories will be referred to in the instructions provided below:

- *<region_dir>*: The *installation stand-alone* (see Section 1.4) region home directory, typically “##rfc_sa”.
- *<configuration_dir>*: The stand-alone Config directory, typically *<region_dir>/Config*.
- *<tar_root_dir>*: The directory where the release package was untarred.
- *<ens_post_root_dir>*: The directory selected to hold EnsPost parameter files

1.4 Pre-installation Steps

1. Install the HEFS release as described in the *HEFS Install Notes*.
2. Install the EnsPostPE as described in the *EnsPostPE Configuration Guide* and use the software to estimate parameters for the locations for which EnsPost must execute. This must

be done before confirming the installation in Section 2.3. The parameters .tgz file must be in the following format:

<LocationID>.<ParameterID>.enspost.parameters.tgz

NOTE: If they are not in a .tgz file (if they're in a .zip file), see Appendix B of the *EnsPostPEConfigurationGuide* for instructions on how to repackage the parameters.

3. Create an *installation stand-alone* for initial installation of the EnsPost. The stand-alone must include configuration files added as part of the installation of the data ingest components (it may be the same stand-alone used therein). Configuration changes made here will later be ported to an OC for synchronization to the central server, but only after installation is successful on a stand-alone.
4. Identify a workflow that generates an ensemble of stream flow forecasts. It can be an MEFP-based ensemble (see the *MEFP Configuration Guide: Forecast Components*) or an existing ESP workflow.

Installation instructions below will be based upon the segment, stations, and group identified during the installation of the data ingest components. Instructions for extrapolating to other segments, stations, and groups will be provided.

1.5 Release Package

As part of installing the HEFS release, the release package was acquired and untarred in a directory referred to in the *HEFS Install Notes* as <tar_root_dir>. Within this document, only the contents of the subdirectory enspost are used. The enspost subdirectory contents are as follows, with a description of each subdirectory:

<tar_root_dir>/enspost/...

samples – Sample files (snippets of XML) referred to in the instructions below as needed.

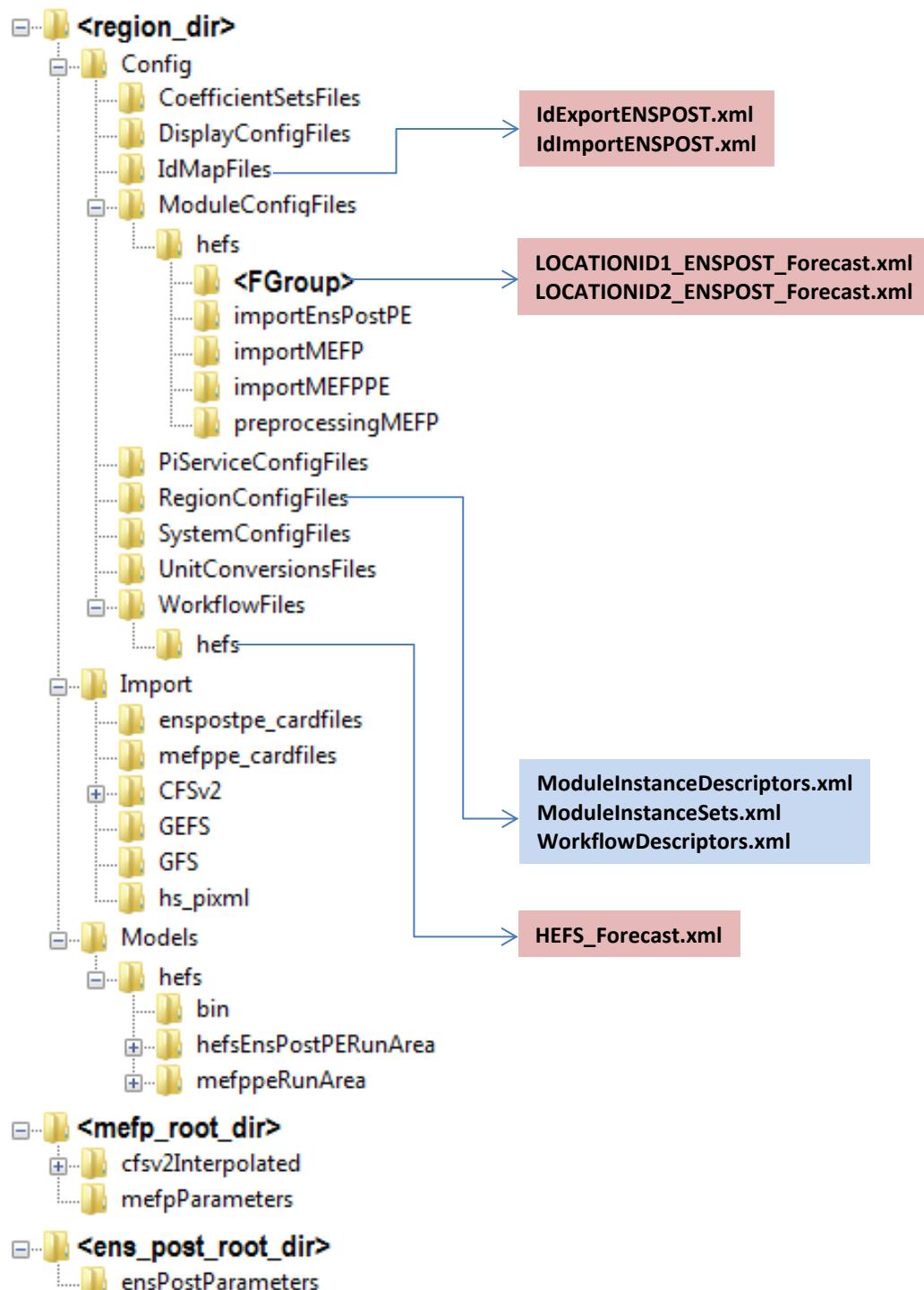
examples – Example configuration files to be used as a reference in the instructions below.

1.6 Affected Configuration Files

The diagram in Figure 1 summarizes all configuration files created or modified by the installation steps provided in this document. The directory structure shown includes all directories affected by any HEFS component. Files with a light red background are general across all RFCs, while those with a light blue background are specific to each RFC and require editing. Note the following:

- The directory corresponding to **<ens_post_root_dir>** was created during installation of the EnsPostPE and is pointed to by a global property.
- The directory corresponding to **<mefp_root_dir>** is used by the MEFP and MEFPPPE applications and will not be used herein.
- The directories shown under **<region_dir>/Import** were created during installation of the EnsPostPE components and will not be used herein.

Figure 1: Configuration files created or modified during installation.



2 Installing EnsPost Components

This section provides instructions for the following:

- Making needed additions and changes to configuration files in the installation stand-alone
- Verifying the installation of the EnsPost components in the stand-alone
- Synchronizing those changes with the central server

By the end of this section, all modules and workflows necessary for the EnsPost to execute and post-process ensembles will be put in place and verified.

NOTE: In all sections that follow, changes that must be made to allow for additional segments and forecast groups to be added will be marked by the following: **TO ADD NEW SEGMENT** or **FORECAST GROUP**. The list of those tasks will be summarized in Section 3.

2.1 ***Copy New Files and Directories (Required)***

Execute the following command to copy *all* new files and directories that are necessary for running the EnsPost components into the installation stand-alone directory structure

```
cd <tar_root_dir>/enspost  
cp -r Config <region_dir>/.
```

Most of the files and directories just copied will not be modified further.

2.2 Configuration File Changes (All Steps Required)

Described in the following sections are changes that must be made to the configuration files to setup EnsPost.

2.2.1 Create new File: LOCATIONID1_ENSPOST_Forecast.xml

Action: Create new module to run EnsPost for one *installation location*:

```
<configuration_dir>/ModuleConfigFiles/hefs/FGroup/LOCATIONID1_ENSPOST_Forecast.xml
```

See the example below for text to use, replacing *LOCATIONID1* with the location id of the first point. Also, replace *FGroup* with an appropriate forecast group directory name (i.e. keyinf).

- Modify the red highlighted `exportRunFileActivity` section to setup the running of EnsPost. Run file properties that are highlighted in blue are required. Properties in green are optional.

Required run file properties

- `errorModel`: specify the ErrorModel for EnsPost to use. Valid options are ER0, ERD, ERS. For example:
 - `<string key="errorModel" value="ERS"/>`
- `parameterDir`: points to where the tar/gzipped up parameters are stored. This is not optional. By default, it'll point to the ENS_POST_ROOT_DIR global property value but can point anywhere. For example:
 - `<string key="parameterDir" value="Models/hefsEnsPostModelAdapter/parameters"/>`

Optional run file properties

By default, EnsPost will use the location ID and parameter ID of the input streamflow ensemble to construct the name of the estimated parameters file. The following 3 properties can be set to override the default values.

- `parameterFile`: Optional. This will allow you to specify the name of the estimated parameters .tgz file. The default format of the parameters file is <LocationId>.<ParameterId>.enspost.parameters.tgz. For example:
 - `<string key="parameterFile" value="HUNP1ESP.QINE.enspost.parameters.tgz"/>`
- `peLocationID`: Optional. This allows you to specify the location ID used in the estimated parameters. For example:
 - `<string key="peLocationID" value="HUNP1ESP"/>`
- `peParameterID`: Optional. This allows you to specify the parameter ID used in the estimated parameters. For example:
 - `<string key="peParameterID" value="QINE"/>`

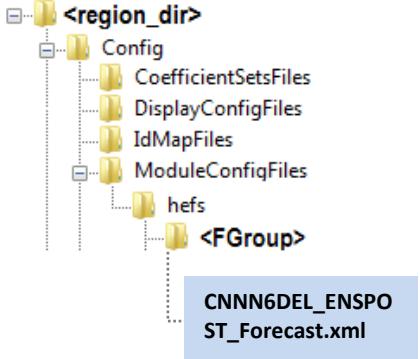
- **disaggOutput**: Optional. This allows you to specify whether the output should be disaggregated or not. The default value (if not specified) is set to true. For example:
 - <string key="disaggOutput" value="false"/>saaaaaaaaaaaaaa
- Update the **green highlighted** section (input timeSeriesSets). An observed streamflow and a streamflow ensemble needs to be identified and specified here.
- Update the **gray highlighted** section (output timeSeriesSets). The output moduleInstanceID should match the moduleInstanceID of this enspost configuration file.
- Make sure the **red highlighted** LOCATIONID1s are all updated with the proper location ID.
- Make sure to not modify the **blue highlighted** section. Default IdMapping files are delivered and can be modified as needed. See Section 4.1.1

An example is provided in the following:

<tar_root_dir>/enspost/examples/Config/ModuleConfigFiles/hefs/fgroup/CNNN6DEL_ENSPOST_Forecast.xml

Description: The added Modules are used to run EnsPost to post-process ensembles.

TO ADD NEW Locations: Copy the EnsPost module and rename it to include the name of the 2nd location. Then update the required run file properties to reflect the new LocationID.

Standard Location: <configuration_dir>/ModuleConfigFiles/hefs/fgroup/	Contents: LOCATIONID1_ENSPOST_Forecast.xml
 <pre> <region_dir> ... <Config> ... <hefs> <FGroup> Cnnn6del_EnsPost_ST_Forecast.xml </FGroup> </hefs> </Config> ... </pre>	<pre> <generalAdapterRun xmlns="http://www.wldelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.wldelft.nl/fews http://fews.wldelft.nl/schemas/version1.0/generalAdapterRun.xsd"> <general> <description>EnsPost CNNN6DEL</description> <piVersion>1.5</piVersion> <rootDir>%TEMP_DIR%</rootDir> <workDir>%ROOT_DIR%/work</workDir> <exportDir>%ROOT_DIR%/input</exportDir> <exportDataSetDir>%ROOT_DIR%/work/parameters</exportDataSetDir> <exportIdMap>IdExportENSP&lt;ns0:POST</exportIdMap> <importDir>%ROOT_DIR%/output</importDir> <importIdMap>IdImportENSP&lt;ns0:POST</importIdMap> <dumpFileDir>\$GA_DUMPFILEDIR\$</dumpFileDir> <dumpDir>%ROOT_DIR%</dumpDir> <diagnosticFile>%ROOT_DIR%/output/diag.xml</diagnosticFile> </general> <activities> <startUpActivities> <makeDir> <dir>%ROOT_DIR%/work</dir> </makeDir> </startUpActivities> <exportActivities> <exportTimeSeriesActivity> <exportFile>inputs.xml</exportFile> <timeSeriesSets> <timeSeriesSet> </pre>

Standard Location: <configuration_dir>/ModuleConfigFiles/he fs/fgroup/	Contents: LOCATIONID1_ENSPOST_Forecast.xml
	<pre> <moduleInstanceId>ADDSSUB_CNNN6DEL_ADDSPILL_Forecast</moduleInstanceId> <valueType>scalar</valueType> <parameterId>QINE</parameterId> <locationId>CNNN6TOT</locationId> <timeSeriesType>simulated forecasting</timeSeriesType> <timeStep unit="hour" multiplier="6"/> <relativeViewPeriod unit="hour" start="-120" startOverrulable="true" end="0"/> <readWriteMode>read only</readWriteMode> </timeSeriesSet> <timeSeriesSet> <moduleInstanceId>ADDSSUB_CNNN6DEL_ADD.USQ_Forecast</moduleInstanceId> <valueType>scalar</valueType> <parameterId>SQIN</parameterId> <locationId>CNNN6TIF</locationId> <timeSeriesType>simulated forecasting</timeSeriesType> <timeStep unit="hour" multiplier="6"/> <relativeViewPeriod unit="hour" start="0" end="120" endOverrulable="true"/> <readWriteMode>add originals</readWriteMode> <ensembleId>MEFP</ensembleId> <ensembleMemberIndexRange start="1961" end="1997"/> </timeSeriesSet> </timeSeriesSets> </exportTimeSeriesActivity> <exportRunFileActivity> <exportFile>%ROOT_DIR%/run_info.xml</exportFile> <properties> <string key="model" value="ohd.hseb.hefs.enspost.adapter.HEFSEnsPostModelAdapter"/> <int key="printDebugInfo" value="0"/> <string key="errorModel" value="ERS"/> <string key="parameterDir" value="\$ENS_POST_ROOT_DIR\$/ensPostParameters"/> <!-- This variable is required --> <string key="parameterFile" value="LOCATIONID1.SQIN.enspost.parameters.tgz"/> <!-- OPTIONAL. Preferred method since it points directly to the params --> <string key="peLocationID" value="LOCATIONID1"/> <!-- OPTIONAL. Location ID --> <string key="peParameterID" value="SQIN"/> <!-- OPTIONAL. Parameter ID --> </properties> </exportRunFileActivity> </exportActivities> <executeActivities> <executeActivity> <command> <className>ohd.hseb.hefs.utils.adapter.HEFSModelAdapter</className> <binDir>\$HEFSBINDIR\$</binDir> </command> <arguments> <argument>%ROOT_DIR%/run_info.xml</argument> </arguments> <timeOut>60000</timeOut> </executeActivity> </executeActivities> <importActivities> <importTimeSeriesActivity> <importFile>outputs.xml</importFile> <timeSeriesSets> <timeSeriesSet> <moduleInstanceId>LOCATIONID1_ENSPOST_Forecast</moduleInstanceId> <valueType>scalar</valueType> <parameterId>SQIN</parameterId> <locationId>LOCATIONID1</locationId> <timeSeriesType>simulated forecasting</timeSeriesType> <timeStep unit="hour" multiplier="6"/> <readWriteMode>add originals</readWriteMode> <ensembleId>HEFSENSPOST</ensembleId> </pre>

Standard Location: <configuration_dir>/ModuleConfigFiles/he fs/fgroup/	Contents: LOCATIONID1_ENSPOST_Forecast.xml
	<pre> <ensembleMemberIndexRange start="1961" end="1997"/> </timeSeriesSet> </timeSeriesSets> </importTimeSeriesActivity> </importActivities> </activities> </generalAdapterRun></pre>

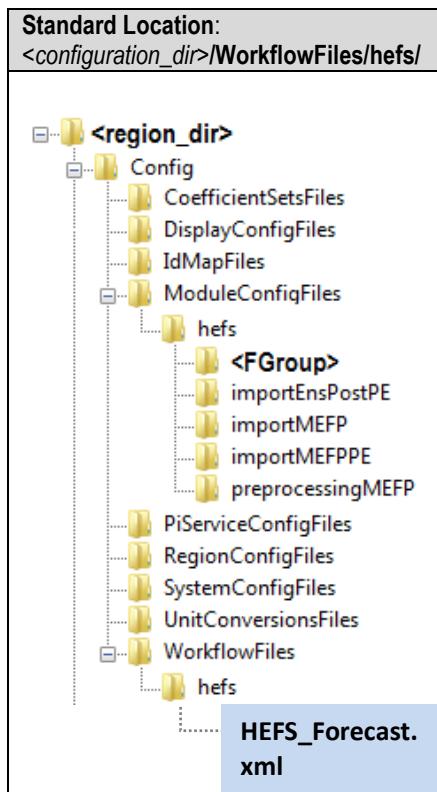
2.2.2 Modify an Existing Workflow

Action: Modify an existing workflow file (identified in the Pre-installation steps in Section 1.4 Step 4) that generates an ensemble of stream flow forecasts. A sample workflow is provided in:

```
<tar_root_dir>/enspost/samples/Config/WorkflowFiles/hefs/HEFS_Forecast.xml
```

Replace “LOCATIONID1/2” with the location IDs which the EnsPost needs to post process the streamflow ensembles of. See the example below for how the file should appear after making changes (the affected lines are in **bold**), replacing **LOCATIONID1** with the name of the *first location ID*.

TO ADD NEW Locations: Identify an existing workflow which contains the proper input data (See Section 1.4 Step 4) and add the EnsPost module for the new location.

Standard Location: <configuration_dir>/WorkflowFiles/hefs/	Contents: <i>HEFS_Forecast.xml (sample name)</i>
 <pre><region_dir> ... <Config> ... <ModuleConfigFiles> <hefs> ... <FGroup> <importEnsPostPE> <importMEFP> <importMEFPPE> <preprocessingMEFP> ... </hefs> </ModuleConfigFiles> </Config> ... <WorkflowFiles> <hefs> HEFS_Forecast.xml </hefs> </WorkflowFiles> </region_dir></pre>	<pre><?xml version="1.0" encoding="UTF-8"?> <workflow xmlns="http://www.wldelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.wldelft.nl/fews http://fews.wldelft.nl/schemas/version1.0/workflow.xsd" version="1.1"> ... <!-- Post process streamflow ensembles using EnsPost --> <activity> <runIndependent>false</runIndependent> <moduleInstanceId>LOCATIONID1_ENSPOST_Forecast</moduleInstanceId> </activity> <activity> <runIndependent>false</runIndependent> <moduleInstanceId>LOCATIONID2_ENSPOST_Forecast</moduleInstanceId> </activity> </workflow></pre>

2.2.3 Modify Existing File: ModuleInstanceDescriptors.xml

Action: Define new module instance descriptors in the file:

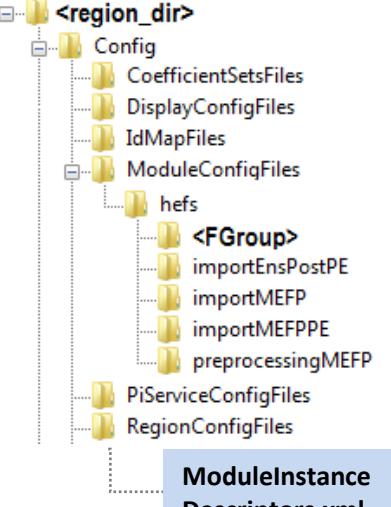
<configuration_dir>/RegionConfigFiles/ModuleInstanceDescriptors.xml

See the example below for text to use, replacing **LOCATIONID1/LOCATIONID2** with the location id of the first/second point. One module instance descriptor should be added per *installation location*. A sample is provided in the following file (search for “HEFS” to find added module instance descriptors):

<tar_root_dir>/enspost/samples/Config/RegionConfigFiles/ModuleInstanceDescriptors.xml

Description: The added modules are used to run the EnsPost to post process the input streamflow ensembles.

TO ADD NEW Locations: Copy and paste the existing module instance descriptor for <LOCATIONID1> and modify appropriately for the new location.

Standard Location: <configuration_dir>/RegionConfigFiles/	Contents: <i>ModuleInstanceDescriptors.xml</i>
	<?xml version="1.0" encoding="UTF-8"?> <moduleInstanceDescriptors xmlns="http://www.wldelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.wldelft.nl/fews http://chps1/schemas/moduleInstanceDescriptors.xsd" version="1.0"> ... <moduleInstanceGroup id="HEFS_ENSPOST"> <moduleInstanceDescriptor id="LOCATIONID1_ENSPOST_Forecast"> <moduleId>GeneralAdapter</moduleId> </moduleInstanceDescriptor> <moduleInstanceDescriptor id="LOCATIONID2_ENSPOST_Forecast"> <moduleId>GeneralAdapter</moduleId> </moduleInstanceDescriptor> </moduleInstanceGroup> ... </moduleInstanceDescriptors>

2.2.4 Modify Existing File: ModuleInstanceSets.xml

Action: Define new module instance sets to contain the forecast group specific EnsPost modules. These defined module instance sets may be used elsewhere, specifically in configuration files related to Graphics Generator.

<configuration_dir>/RegionConfigFiles/ModuleInstanceSets.xml

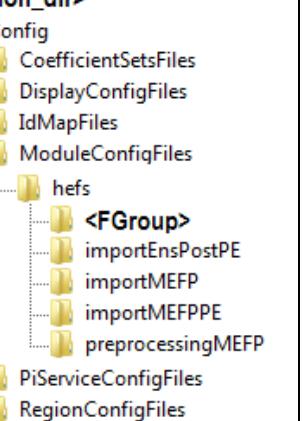
See the example below for text to use, replacing ***LOCATIONID1/LOCATIONID2*** with the location id of the first/second point. A sample is provided in the following file (search for “HEFS” to find added module instance descriptors):

<tar_root_dir>/enspost/samples/Config/RegionConfigFiles/ModuleInstanceSets.xml

Description: The added workflows are used to define module instance sets referred to in other module configuration files required for EnsPost.

NOTE: The modules added in EnsPost_Input should match the input simulated timeseries in the module configuration file defined in Section 2.2.1. The modules added in EnsPost_Output should match the output timeseries in the module configuration file defined in the same section.

TO ADD NEW Locations: Add entries in the module instance sets for any new modules created following steps in Section 2.2.1.

Standard Location: <configuration_dir>/RegionConfigFiles/	Contents: <i>ModuleInstanceSets.xml</i>
 <pre> <region_dir> +-- Config +-- CoefficientSetsFiles +-- DisplayConfigFiles +-- IdMapFiles +-- ModuleConfigFiles +-- hefs +-- <FGGroup> +-- importEnsPostPE +-- importMEFP +-- importMEFPPE +-- preprocessingMEFP +-- PiServiceConfigFiles +-- RegionConfigFiles </pre> <p style="background-color: #e0f2ff; padding: 5px;">ModuleInstance Sets.xml</p>	<pre> <?xml version="1.0" encoding="UTF-8"?> <moduleInstanceSets xmlns="http://www.wldelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.wldelft.nl/fews http://chps1/schemas/moduleInstanceSets.xsd" version="1.1"> ... <!-- HEFS EnsPost --> <moduleInstanceSet id="EnsPost_Input" name="EnsPost Input"> <moduleInstanceId>ADDSUB_CNNN6DEL_ADD.USQ_Forecast</moduleInstanceId> <moduleInstanceId>ADDSUB_WALN6DEL_ADD.BFQ_Forecast</moduleInstanceId> </moduleInstanceSet> <moduleInstanceSet id="EnsPost_Output" name="EnsPost Output"> <moduleInstanceId>CNNN6DEL_ENSPOST_Forecast</moduleInstanceId> <moduleInstanceId>WALN6DEL_ENSPOST_Forecast</moduleInstanceId> </moduleInstanceSet> ... </moduleInstanceSets> </pre>

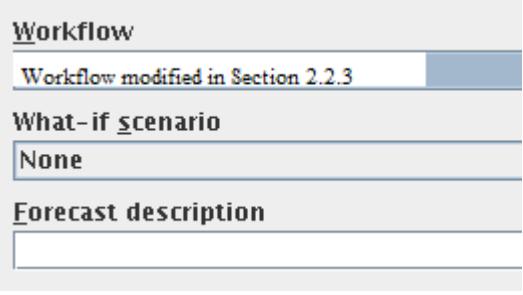
2.3 Confirm Configuration

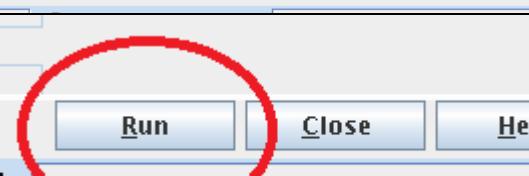
Described below are steps to perform to test that the installation was successful. This requires that a streamflow ensemble has been created for the locations EnsPost has been configured for. Furthermore, parameters must have already been estimated for the *installation locations* under

Furthermore, parameters must have been estimated for the *installation catchments* with appropriately named parameter files under <ens_post_root_dir>/ensPostParameters.

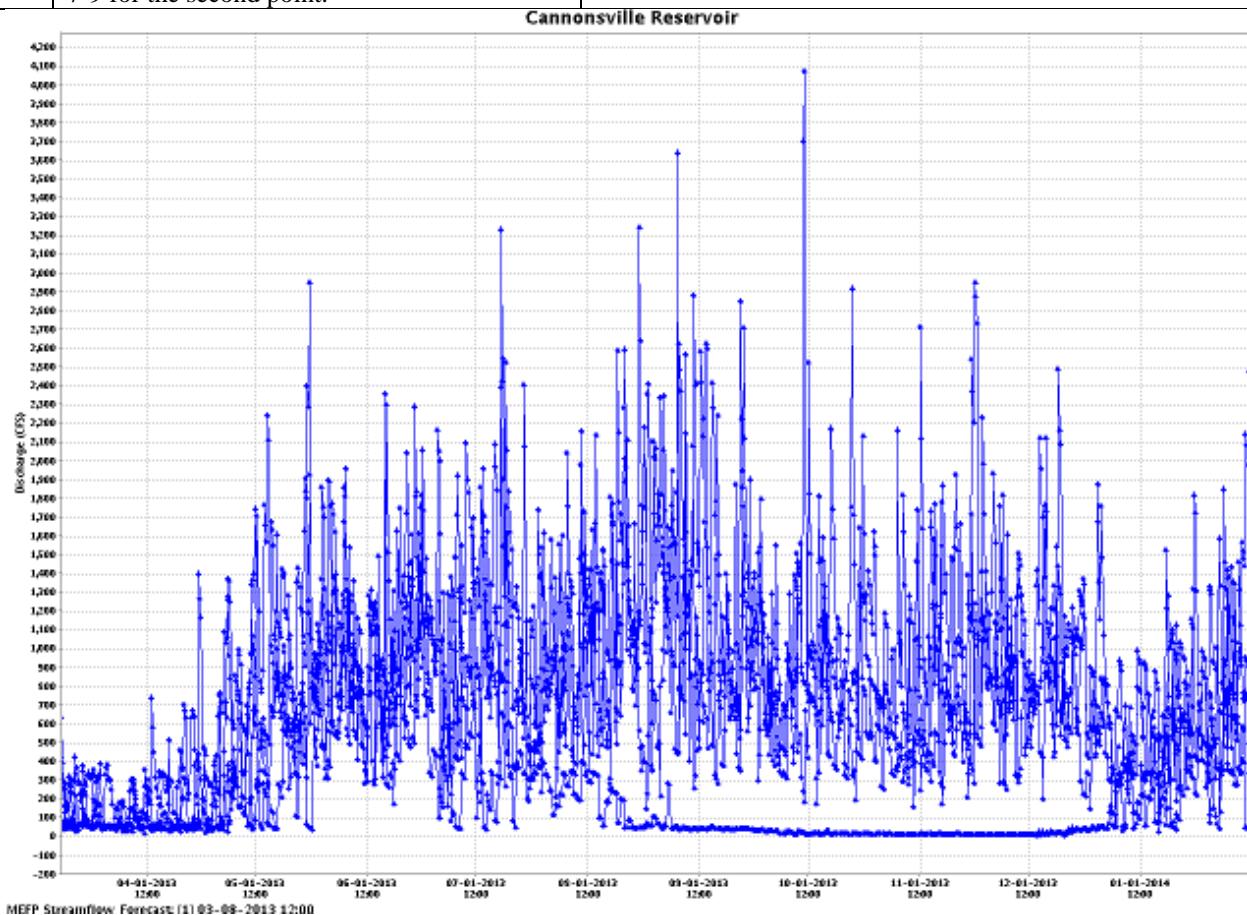
Confirming the configuration can be done in the *installation stand-alone*, or whatever stand-alone was used to test the EnsPost configuration. The general process uses standard CHPS tools and is as follows:

1. Execute the workflow modified in Step 2.2.2 using the **CHPS Manual Forecast Dialog**.
2. Confirm that ensembles of streamflow were post-processed for the locations in question using the **CHPS Database Viewer**.

#	Action	Expected Results
1	Start FEWS using the installation standalone: <code>cd <region_dir></code> <code>cd ..</code> <code>./hefsPlugins/fews_hefsPlugins.sh ##rfc_sa</code> &	FEWS will be started. The splash screen displayed will vary by RFC. The default splash screen is:  After a short time, the CHPS interface will open.
2	Click on the Manual Forecast Button .	
3	The Manual Forecast Panel will open, allowing you to select a workflow to run. In the Workflow List, select the workflow modified in Section 2.2.2.	

#	Action	Expected Results
4	Set the Forecast length to be less than or equal to the MEFP Forecast length. The default MEFP Forecast length is 330 days.	
5	In the Manual Forecast Panel , click Run.	
6	When the workflow is done, you should see “Workflow <workflow modified in Section 2.2.3> Completed” in the logs panel. For example, “Workflow HEFS Forecast Completed”	----- Workflow MEFP_Streamflow_Forecast Completed -----
7	Open the Database viewer in order to confirm that EnsPost successfully ran. Select the workflow that was just completed in the database viewer, and find four entries, with the same locationId and an ensembleId of HEFSENSPOST.	

	T0	Dispatch time	Workflow	What-if scenario	Description	FDO				
✖	03-08-2013 12:00	03-27-2013 19:46	MEFP_Streamflow_Forecast			wardj				
	03-08-2013 12:00	03-27-2013 19:40	MEFP_Forecast			wardj				
	03-08-2013 00:00	03-19-2013 13:08	ImportMEFP-GEFSGrids			wardj				
	03-07-2013 12:00	03-19-2013 13:03	ImportMEFP-CFSv2Grids			wardj				
	03-02-2013 12:00	03-19-2013 12:59	ImportMEFP-CFSv2Grids			wardi				
moduleInst...	group	parameterId	locationId	locationNa...	x	y	timeSeries...	ensemble	ensemble...	valueType
29	16	30	75	62			3	2		37
MAPE_Tim...	Evapotran...	MAPE	SBY	Salisbury AP	-75.52	38.33	simulated ...			scalar
MAPE_Tim...	Evapotran...	MAPE	DSV	Dansville	-77.71	42.57	simulated ...			scalar
MAPE_Tim...	Evapotran...	MAPE	ELM	Elmira AP	-76.9	42.17	simulated ...			scalar
MAPE_Tim...	Evapotran...	MAPE	MRB	Martinsbu...	-77.98001	39.4	simulated ...			scalar
MAPE_Tim...	Evapotran...	MAPE	CHO	Charlottes...	-78.45	38.13	simulated ...			scalar
CNNN6DE...	Discharge	SQIN	CNNN6TIF	Cannonsvi...	-75.378	42.067	simulated ...	HEFSENSP...	1961	scalar
CNNN6DE...	Discharge	SQIN	CNNN6TIF	Cannonsvi...	-75.378	42.067	simulated ...	HEFSENSP...	1962	scalar
CNNN6DE...	Discharge	SQIN	CNNN6TIF	Cannonsvi...	-75.378	42.067	simulated ...	HEFSENSP...	1963	scalar
CNNN6DE...	Discharge	SQIN	CNNN6TIF	Cannonsvi...	-75.378	42.067	simulated ...	HEFSENSP...	1964	scalar
CNNN6DE...	Discharge	SQIN	CNNN6TIF	Cannonsvi...	-75.378	42.067	simulated ...	HEFSENSP...	1965	scalar
CNNN6DE...	Discharge	SQIN	CNNN6TIF	Cannonsvi...	-75.378	42.067	simulated ...	HEFSENSP...	1966	scalar
CNNN6DE...	Discharge	SQIN	CNNN6TIF	Cannonsvi...	-75.378	42.067	simulated ...	HEFSENSP...	1967	scalar
CNNN6DE...	Discharge	SQIN	CNNN6TIF	Cannonsvi...	-75.378	42.067	simulated ...	HEFSENSP...	1968	scalar
CNNN6DE...	Discharge	SQIN	CNNN6TIF	Cannonsvi...	-75.378	42.067	simulated ...	HEFSENSP...	1969	scalar
CNNN6DE...	Discharge	SQIN	CNNN6TIF	Cannonsvi...	-75.378	42.067	simulated ...	HEFSENSP...	1970	scalar
CNNN6DE...	Discharge	SQIN	CNNN6TIF	Cannonsvi...	-75.378	42.067	simulated ...	HEFSENSP...	1971	scalar
CNNN6DE...	Discharge	SQIN	CNNN6TIF	Cannonsvi...	-75.378	42.067	simulated ...	HEFSENSP...	1972	scalar
CNNN6DE...	Discharge	SQIN	CNNN6TIF	Cannonsvi...	-75.378	42.067	simulated ...	HEFSENSP...	1973	scalar
CNNN6DE...	Discharge	SQIN	CNNN6TIF	Cannonsvi...	-75.378	42.067	simulated ...	HEFSENSP...	1974	scalar
CNNN6DE...	Discharge	SQIN	CNNN6TIF	Cannonsvi...	-75.378	42.067	simulated ...	HEFSENSP...	1975	scalar



2.4 Synchronize Changes to the Central Server (Required)

Once the installation steps above are complete, including confirmation, port all of the configuration changes to the central server. Four files are modified while all others are new; see Figure 1 in Section 1.6 for a list (files in blue boxes are modified and those in red boxes are new).

Add ENS_POST_ROOT_DIR to all of the fss global property files. To do this:

- 1) Open the following files for each FSS## (replace ?? with the 2 letter RFC abbreviation)
`/awips/chps_local/fss/??rfc/FSS##/FewsShell/??rfc/fss_global.properties`
- 2) Add the following properties (The value should match the central location which was chosen to write out estimated parameters in the EnsPostPE Configuration Guide):
`ENS_POST_ROOT_DIR`

Use the FEWS configuration manager (cm) tool for installing the files in the central server (place the changes in the FEWS OC, validate, and synchronize/upload the changes).

TO ADD NEW Locations: Repeat this synchronization step for any new created or modified files.

3 Adding Segments and Forecast Groups

Before adding a new location to the EnsPost components, do the following:

1. Estimate parameters for all of the locations. See Section 3 of the *EnsPostPE Configuration Guide* for basic instructions on how to estimate parameters.

3.1 Adding a New Location

To add a new location:

- Identify the location IDs for the segments for which EnsPost will be run to post process streamflow ensembles.

The actions described in the following sections must be repeated in order

- Section 2.2.1 – Create a new EnsPost Module for the location.
- Section 2.2.2 – Modify the workflows to execute the new location’s EnsPost module.
- Section 2.2.3 – Add the created modules to the ModuleInstanceDescriptors.xml file.
- Section 2.2.4 – Add the created modules to the sets defined in ModuleInstanceSets.xml.
- Section 2.3 – Confirm the installation for the new segment.
- Section 2.4 – Synchronize changes to the central server.

4 Tips and Trouble Shooting

This section provides basic tips and troubleshooting related to the configuration of the EnsPost components.

4.1 Tips

4.1.1 Modify new File: IdExportENSPOST.xml & IdImportENSPOST.xml (Optional)

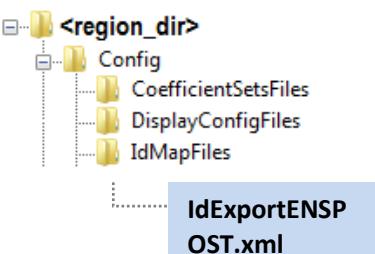
*Perform this step **only** if necessary if the location IDs in the parameter files don't match the locationId of the input streamflow ensemble. However, the **recommended** method to handle the mismatch of location ID's is to define the location ID in the run file properties (See Section 2.2.1, optional run file properties)*

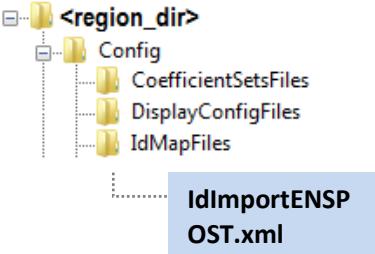
Action: Modify the file

```
<configuration_dir>/IdMapFiles/IdExportENSPOST.xml  
<configuration_dir>/IdMapFiles/IdImportENSPOST.xml
```

to define id-mappings if necessary

In such a case, id-mappings should be defined in order to map the location ID of the ensemble to the generated parameter files. See the examples below.

Standard Location: <configuration_dir>/IdMapFiles	Contents: <i>IdExportENSPOST.xml</i>
 <pre>└─ <region_dir> └─ Config └─ CoefficientSetsFiles └─ DisplayConfigFiles └─ IdMapFiles └─ IdExportENSP └─ OST.xml</pre>	<pre><?xml version="1.0" encoding="UTF-8"?> <idMap version="1.1" xmlns="http://www.wldelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.wldelft.nl/fews http://chps1/schemas/idMap.xsd"> <map internalParameter="SQIN" internalLocation="CNNN6TIF" externalParameter="SQIN" externalLocation="CNNN6"/> <map internalParameter="SQIN" internalLocation="WALN6TOT" externalParameter="QINE" externalLocation="WALN6"/> <enableOneToOneMapping/> </idMap></pre>

Standard Location: <configuration_dir>/IdMapFiles	Contents: <i>IdImportENSPOST.xml</i>
 <pre> <region_dir> └── Config ├── CoefficientSetsFiles ├── DisplayConfigFiles └── IdMapFiles └── IdImportENSP └── OST.xml </pre>	<pre> <?xml version="1.0" encoding="UTF-8"?> <idMap version="1.1" xmlns="http://www.wldelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.wldelft.nl/fews http://fews.wldelft.nl/schemas/version1.0/idMap.xsd"> <map internalParameter="SQIN" internalLocation="WALN6DEL" externalParameter="QINE" externalLocation="WALN6"/> <map internalParameter="SQIN" internalLocation="CNNN6DEL" externalParameter="SQIN" externalLocation="CNNN6"/> <enableOneToOneMapping/> </idMap> </pre>

4.2 *Troubleshooting*

4.2.1 The latest observed value could not be computed; some required observed time series values are missing.

Before post processing a streamflow ensemble, EnsPost validates the observed timeseries to make sure there are no missing values. If the above error message occurs, check to make sure QINE data was populated from the most recent forecast run.

4.2.2 Error executing model: Failed to setup ensemble to post-process:enspost.parameters.tgz (No such file or directory)

EnsPost is unable to find the estimated parameters. Double check all of the run file properties (See section 2.2.1) to determine if they're pointing to the right location and/or file.